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A Study of Inequalities in Farm Real Estate Assessment in South Dakota

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A STUDY OF INEQUALITIES IN FARM REAL ESTATE ASSESSMENT IN SOUTH DAKOTA

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INTRODUCTION

One of the few beneficial effects of the recent business depression has been the focusing of an increased amount of attention on taxes and tax systems. Research agencies, tax commissions and citizens' tax organizations have given the matter thorough study. As a result of increased knowledge of the widespread havoc caused by excessive taxation of general property, many states which formerly obtained most of their revenue from general property taxes, have resorted to supplementary forms of taxation, such as income taxes, sales taxes, corporation taxes and others. It is beyond the scope of this paper to consider these sources of revenue in detail; they being mentioned only to point out that reform in taxation has been carried on vigorously in the last few years.

In South Dakota several new taxes have been added to supplement those on general property, but no effort has been made recently to improve the administration of the general property tax system. Since it is altogether unlikely that general property taxes as a major source of revenue can be eliminated, it is of prime importance that the evils in the system be corrected. The fiscal virtue this tax possesses rests in great part on the equity of the initial assessment, thus an examination of assessment with a view to pointing out some of the injustices perpetuated by it is fundamental to a reform program. This study has shown that inequalities in assessment of property are so many and so widespread that they work heavy and cumulative hardships on certain classes of taxpayers. A change in the system should not be difficult

to achieve once the seriousness of the situation is fully appreciated by the legislature.

The importance of farm real estate in the tax base is made apparent when it is considered that in 1934 it comprised about 60 per cent of the value of all property in the state and 70 per cent of the value of the total real estate.

The distribution of the tax burden between general property taxes and all other major sources is shown by Table 1.

Table 1
Major Sources of Revenue in South Dakota, 1934[1]

General Property Tax	18,897,175
Beverage Tax	132,235
Gasoline Tax	55,171
Gross Income Tax	2,248,764
Motor Fuel Tax	3,873,453
Inheritance Tax	41,313
Insurance Company State Tax	235,201
Cigarette Tax	270,768
Petroleum Tax	78,714
Total	25,808,794[2]

1. Annual Reports Division of Taxation and State Treasurer, 1934.
2. This total does not include licenses, fees and some minor taxes.

From the above table it may be seen that general property contributed about two-thirds of the total tax collected in 1934. Of this, on the basis of taxes collected, farm real estate paid 44.7 per cent, personal property 13.9 per cent, public utility property 12.1 per cent, rural credit land .7 per cent, money and credits 1.1 per cent and platted real estate 27.4 per cent. Since property owners do pay the

major share of taxes, it would certainly be to the benefit of the group as a whole to so remedy assessments that the taxes levied upon them be in proportion to taxpaying capacity, which, of course, is the intention of the laws regarding assessment.

SOURCE OF DATA

The data for three of the counties included in the study--Pennington, Lyman and Gregory, were obtained from the collected data in the CWA Farm Finance Project of the United States Department of Agriculture, supervised in South Dakota by the Department of Agricultural Economics of South Dakota State College. The samples for the remaining fifteen counties used were gathered during the first months of 1935 by Professor R. B. Westbrook of the Department of Agricultural Economics and made available to the author through his courtesy.

Cards modeled on Farm Finance Form 5 of the U. S. Department of Agriculture were used to record all transfers of real estate. On each transfer card appeared the names of both parties to the sale, the dates of transfer and recording, the number of acres included in the sale, and the sales price, assessed valuation and type of deed. The information contained in these cards was used as a basis for this study. In all cases the assessment values for the date nearest that of the sale were used.

In all, 1,617 transfers were analyzed. The numbers chosen for each county are as follows: Brown, 39; Clay, 75; Codington, 44; Corson, 80; Davison, 41; Dewey, 86; Gregory, 160; Haakon, 90; Hand, 104; Lyman, 140; Meade, 157; Minnehaha, 65; Pennington, 125; Sanborn, 85; Union, 111; Walworth, 94; Yankton, 86; and Ziebach, 57.

THE ASSESSMENT SYSTEM

Section 5975 of the Compiled Laws of South Dakota, 1929, says "The territory of each county, not included in any city, incorporated town or organized civil township, shall constitute an assessor's district"----The officials in charge of such districts are called county assessors and hold their jurisdiction over assessment only in lieu of some type of civil organization. Section 5976 of the laws says "each organized civil township shall constitute an assessor's district"---Thus the term county assessor should not mislead one into thinking that South Dakota has a regular county assessment system or even county-wide control over township assessors. Each civil township, incorporated town or city has an individual assessor, and the number in South Dakota totals somewhat more than 1500. The township and city assessors are responsible to the Division of Taxation in Pierre which has very little time or funds to spend in training assessors. A session devoted to instruction is held by some member of the state office each year, but lasts only a few hours and is undoubtedly inadequate to prepare the inexperienced assessor for the proper discharge of his duties.

No qualifications or eligibility rules are stipulated for an assessor except the political ones of being a voter and resident of the district in which he is chosen.

That the intention of the law is the attainment of equality and uniformity in taxation is evident from Section 6700 of the laws, quoted in part as follows: "All property shall be assessed at its true and full value in money. In determining the true and full value of

real and personal property assessors shall not adopt a lower or different standard of value because the same is to serve as a basis for taxation, nor shall he adopt as a criterion of value the price for which the property would sell at auction or at a forced sale, or in the aggregate with all the property in the town or district; but he shall value each article or description of property by itself and at such a sum or price as he believes the same to be fairly worth in money."

The term "true and full value in money" is defined in Section 6666 to mean "the usual cash selling price at the place where the property to which the term is applied shall be at the time of assessment."

The only possible construction to put on the foregoing as regards a criterion of value is that the selling price in the open market should serve exclusively as the basis for valuation and that no other consideration should enter into such valuation.

Sections 6671 and 6708 indicate that the property subject to taxation should be valued each year, the assessor to perform his duties in the months of May and June and the value to be as of May 1.

A fair and equitable valuation by the assessor is absolutely necessary to a fair distribution of the tax on general property. Boards of equalization can do something toward remedying unequitable assessments as between taxing districts, but it is next to impossible for them to correct unfair individual valuations. It should be remembered that under-assessment in some cases does not reduce taxes as a whole; it simply throws more of the burden on those people whose property was assessed at par or above.

THE SALES DATA APPROACH

While there has been some criticism of the use of sales data in a study of this kind, it is the generally recognized means by which comparisons are made of the actual assessment and the level at which, theoretically and actually, it should be made. Adoption of a different standard would violate the law and at the same time introduce confusion into assessments that would make it impossible to equitably list all property on the tax rolls.

Further than this, there is justification for using this approach in that a freely consummated sale implies agreement of both parties as to the worth of the property, and except in cases where one or the other of the parties is incompetent to judge the value of the real estate in question, the price agreed on is likely to be very near the actual and true value. In any case, it seems logical to assume that the sale price is the practicable criterion, and that adoption of another would very likely confuse rather than help.

It is not to be expected of an assessor that he strike exact market valuation in every case. Assessments would be made very well if they came within ten per cent of this value on either side; that is, a range of twenty per cent. This "zone of tolerance" should be sufficient to allow for errors in valuation by both the assessor and the parties to the transfer; and it is reasonable to expect that the average assessments come within this zone.[1] If they do not, an unhealthful situation exists, and attempt at reform should not be delayed.

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1. Compare R. W. Nelson and G. W. Mitchell, Assessment of Real Estate in Iowa and Other Midwestern States, pages 10-11.

PROCEDURE IN CHOOSING SAMPLES

From within each county used in this study as many samples were chosen as seemed to conform to the qualifications set up in advance as to the representativeness of the sales. That is, all family transfers, trades, forced sales and those which seemed not to have the full consideration stated in the deed were eliminated. The field men were instructed to run down the columns of the county deed records and pick out any sale that seemed bona fide. This method of selection was used because it was presumed that transfers chosen in this way would be widely scattered throughout the county, and, in fact, a careful perusal of the range and township numbers included in the description of the lands transferred indicated that this was the case. No intentional bias was exercised in the choice of low value properties in preference to those of high value, but the final result showed that there were more of these cheap farms included, probably because there were more of these sold during the period. Classification in the statistical analysis was made to show separately the manner in which this type of property is assessed but their unusually high assessment ratios did influence the average level of assessment for the county as a whole. Preconceived notions as to the relation between sale price and assessed value were not allowed to influence the choice and no county was eliminated because it seemed to be unrepresentative. No sales of land of less than 20 acres were included.

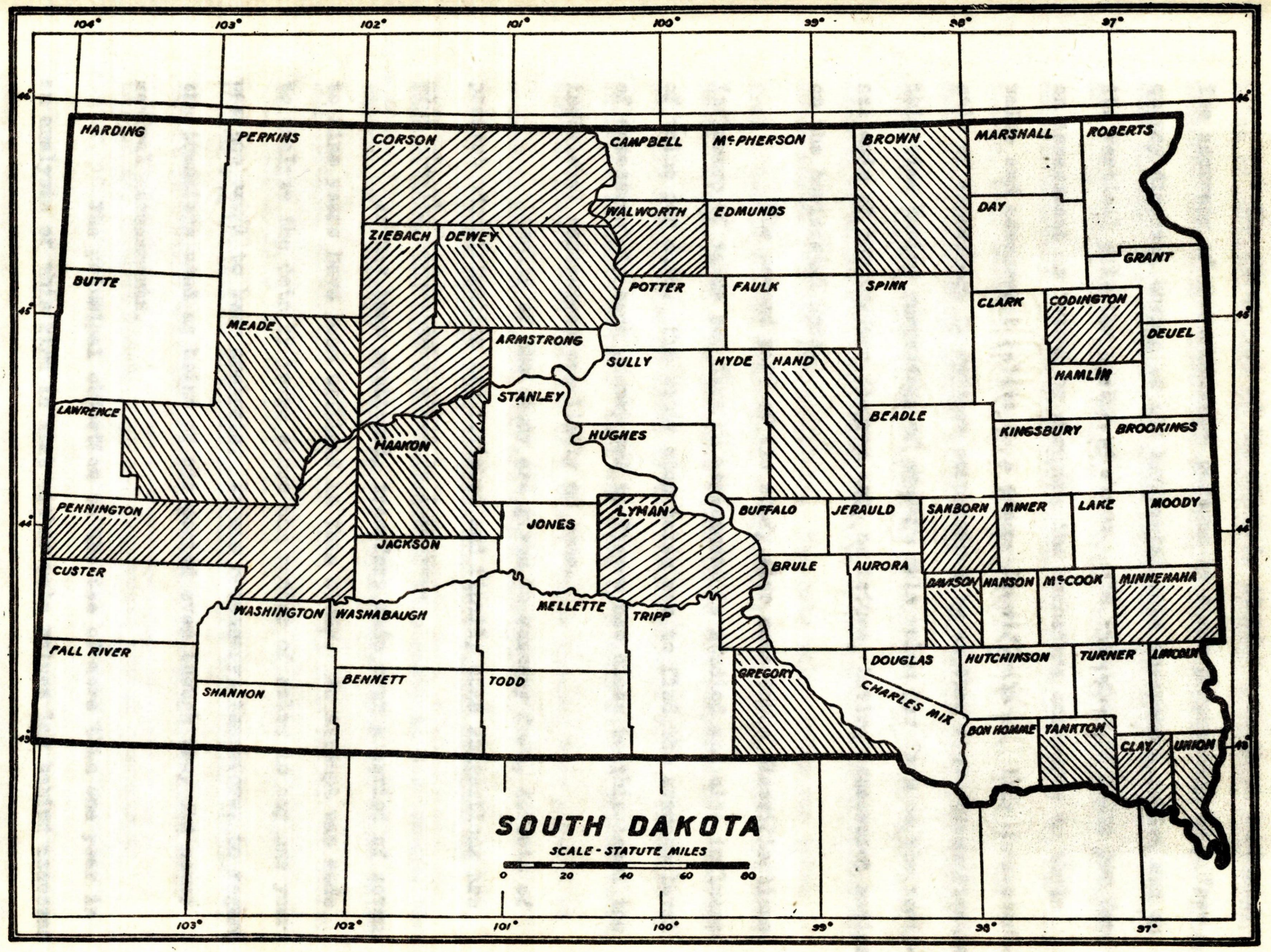
Counties from all sections of the state were chosen so as to show as nearly as possible the assessment conditions as they exist not

only in a limited portion of the state where conditions might be unusually good or bad but to give an approximate picture of the situation in all parts of the state. The shaded counties on the accompanying outline map of South Dakota are the ones included in the study.

The scarcity of data in some counties is probably due in part to the fact that few farms have been sold during the period considered, but more so because a great many of the deeds recorded do not contain the true consideration of the sale, it being optional with the purchaser as to whether he shall say in the deed exactly what price he paid. Since a sufficient sample could not be had for a short period of years, it was found necessary, in order to make the study possible, to use nine years' sales in about half the counties and seven in the rest. The great majority of the cases occur before 1932 with perhaps fifty coming in the years 1933 and 1934. Consequently, these last two years exercise very little weight in the determination of averages and measures of dispersion calculated. Ordinarily, the taking of this long a period could not be justified, but due to special circumstances in South Dakota during the years 1925-1934, it was found possible to use this period without seriously distorting the results. The explanation of this will be taken up in the section on methods of procedure.

METHODS OF PROCEDURE

Two separate bases were used for the classification of the data in this investigation. First, the transfers were considered as a whole without reference to county lines. Second, they were reclassified with reference to the county as a unit.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BUTTE
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BEADLE
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BROOKINGS
HAAKON
HUGHES
PENNINGTON
LYMAN
BUFFALO
JERAULD
SANBORN
MINER
LAKE
MOODY
JONES
JACKSON
BRULE
AURORA
CUSTER
DAVISON
HANSON
McCOOK
MINNEHAHA
WASHINGTON
WASHABAUGH
MELLETTE
TRIPP
FALL RIVER
DOUGLAS
HUTCHINSON
TURNER
LINCOLN
BENNETT
TODD
GREGORY
SHANNON
CHARLES MIX
BON HOMME
YANKTON
CLAY
UNION
SOUTH DAKOTA
SCALE - STATUTE MILES
0
20
40
60
80

The first part of the study is divided into three analyses. The accuracy of the assessment pattern is shown graphically by a frequency diagram, having on its horizontal axis assessment ratios and on its vertical axis the number of farms. The influence of value per farm on assessment is tested by grouping the transfers according to their value and assessment ratios in a cross-classification. This characteristic of assessment is further scrutinized by another cross-classification, this time having percentage of average sale value per farm on the vertical axis of the scatter diagram and, as before, having assessment ratios on the horizontal axis.

The second part of the study also uses three classifications. Influence of value per farm on assessment is studied and also influence of value per acre. The other step taken was to find the average level of assessment in each county and to figure how close to this level the individual assessment was likely to come.

Results of the study are given in summary form, defects of present administration are reviewed and finally some suggestions are made whereby assessments could be improved.

As has been mentioned, transfers made over a period of seven to nine years have been utilized in this study. No attempt was made to analyze the data by years since the number of sales in any one year was too small to bear analysis. It was necessary, therefore, to regard the transfers used as being of one period even though they did cover several assessments.

The principal objection to the use of more than one year in an analysis of this kind is that either sale values lag behind assessed

value or assessed values lag behind sale values. A rising ratio would indicate that sale values were falling, a falling ratio that sale values were rising. If, however, it could be shown that lags did not occur, or in any event were very slight, it would seem that the force of this objection would, for all practical purposes, be nullified. If, for instance, sale values and assessed values declined at practically the same rate, assessment ratios at the end of the period would be nearly the same as they were at the beginning of the period. With this idea in mind an index was constructed of sale values and assessed values for South Dakota for the years 1915-33. The sale value index was taken from a United States Department of Agriculture Bulletin "The Farm Real Estate Situation". The assessed value index was computed from average per acre assessments as given in the Annual Reports of the Division of Taxation of South Dakota. 1915 was used as a base in the latter index, and the former used 1912-14 as a base. These indexes were plotted on a semi-logarithmic scale, and are shown in Figure 1.

From 1925 to 1933 assessed and sale values declined at approximately the same rate. Because of this fact, it was thought that the use of transfers over the period 1925-33 was justified since sales and assessed values did stay pretty much in the same ratio. Of course, this relationship was not perfect, and because of this assessment ratios and deviations are somewhat higher than they really should be; but it is thought that the principal reason for the high assessment ratios is, in most cases, high and inaccurate actual assessment.

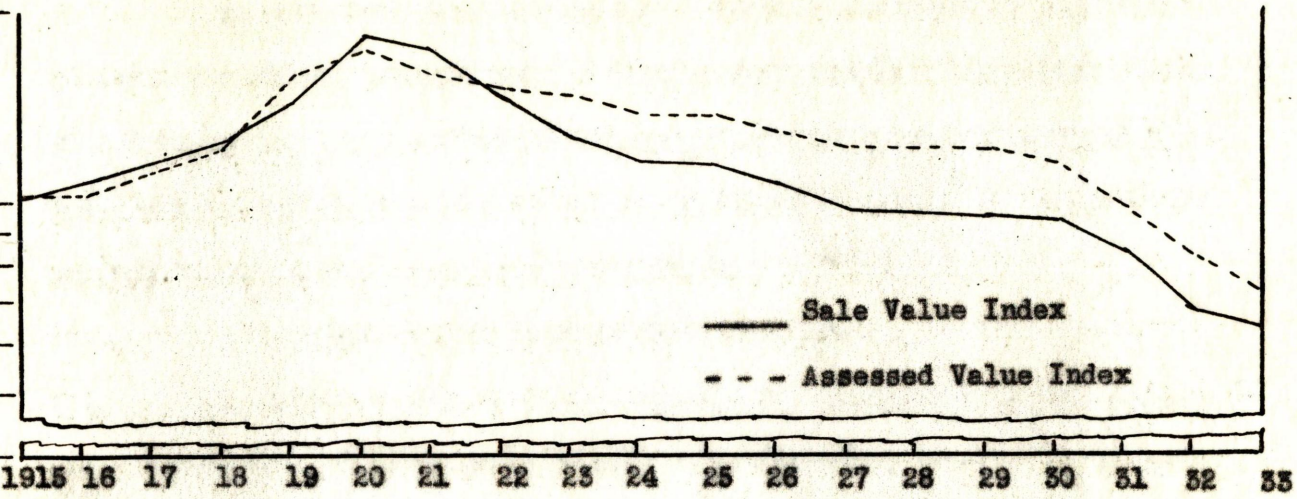

Figure 1. — Index showing changes in assessed and sale values per acre, South Dakota, 1915-33.

DEFINITION OF TERMS

The terms assessment ratio, level of assessment and percentage of assessed to sale value are used interchangeably. If average assessment ratio, average level of assessment, etc. are spoken of, they mean the sum of the sales values in any classification divided into the sum of the assessed values in the same classification. Individual assessment ratios are the percentage of assessed to sale value for any one transfer.

The average deviation measures the deviation from the mean and the mean in this study is the average assessment ratio. An average deviation of .55, for instance, is a larger percentage of a mean of 100 than it is of a mean of 200, making it necessary to consider the size of the means when comparing two average deviations. To arrive at a figure that is comparable without reference to the mean, the coefficient of dispersion was calculated. This is the percentage which the average deviation is of the mean and is useful in making comparison between value classes and counties.[1]

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1. See Appendix A for illustration of method of computing average deviations and coefficients of dispersion.

Another term used frequently is "regressivity". It relates to rate structure, meaning that as the amount assessed diminishes, the rate increases. As a method of levying taxes it is almost unknown today, but in actual practice it still exists as a result of the tendency to undervaluation of high value properties.

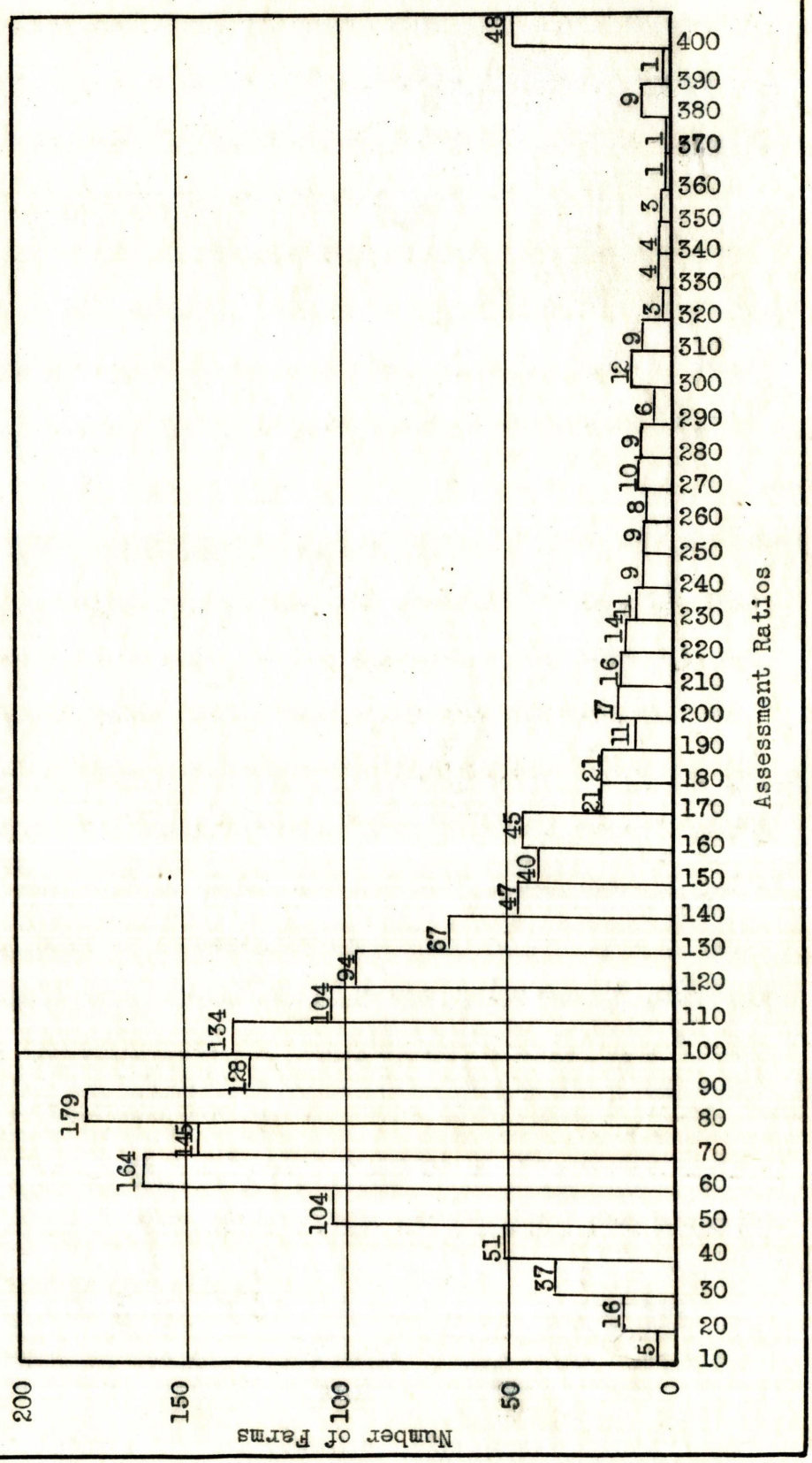
ANALYSIS OF DATA ON STATEWIDE BASIS

In this portion of the study all the transfers in the sample were regarded as a homogeneous whole; that is county lines were disregarded and the data were considered as being by state rather than by county. Results of this analysis are presented under various heads as follows:

Accuracy of Assessment. The accuracy with which assessors performed their duties is graphically shown in Figure 2. Considering 100 as perfect assessment, it is evident that of the 1,617 farms, 829 were assessed at below 100, and 788 were assessed above 100. In percentage these are 51 per cent and 49 per cent respectively. Of those assessed at below 100, 616 fall in the 60-100 group and 213 in the 10-60 group. Converting these numbers to percentages the former constitutes 74 per cent and the latter 26 per cent of all properties under 100. Of those assessed at more than 100 per cent, 584 are in the 100-200 group and 204 in the 200-over group. Quite by coincidence these figures converted to percentages of all over 100 come out exactly the same as those below 100, that is 74 per cent from 100-200 and 26 per cent above 200. Of all 1,617 farms, 13 per cent were assessed at from 10-60, 38 per cent at from 60-100, 36 per cent at from 100-200 and 13 per cent at from 200-over.

Figure 2

Frequency Distribution of Assessment Ratios
of Farm Real Estate Transfers, 1925-34

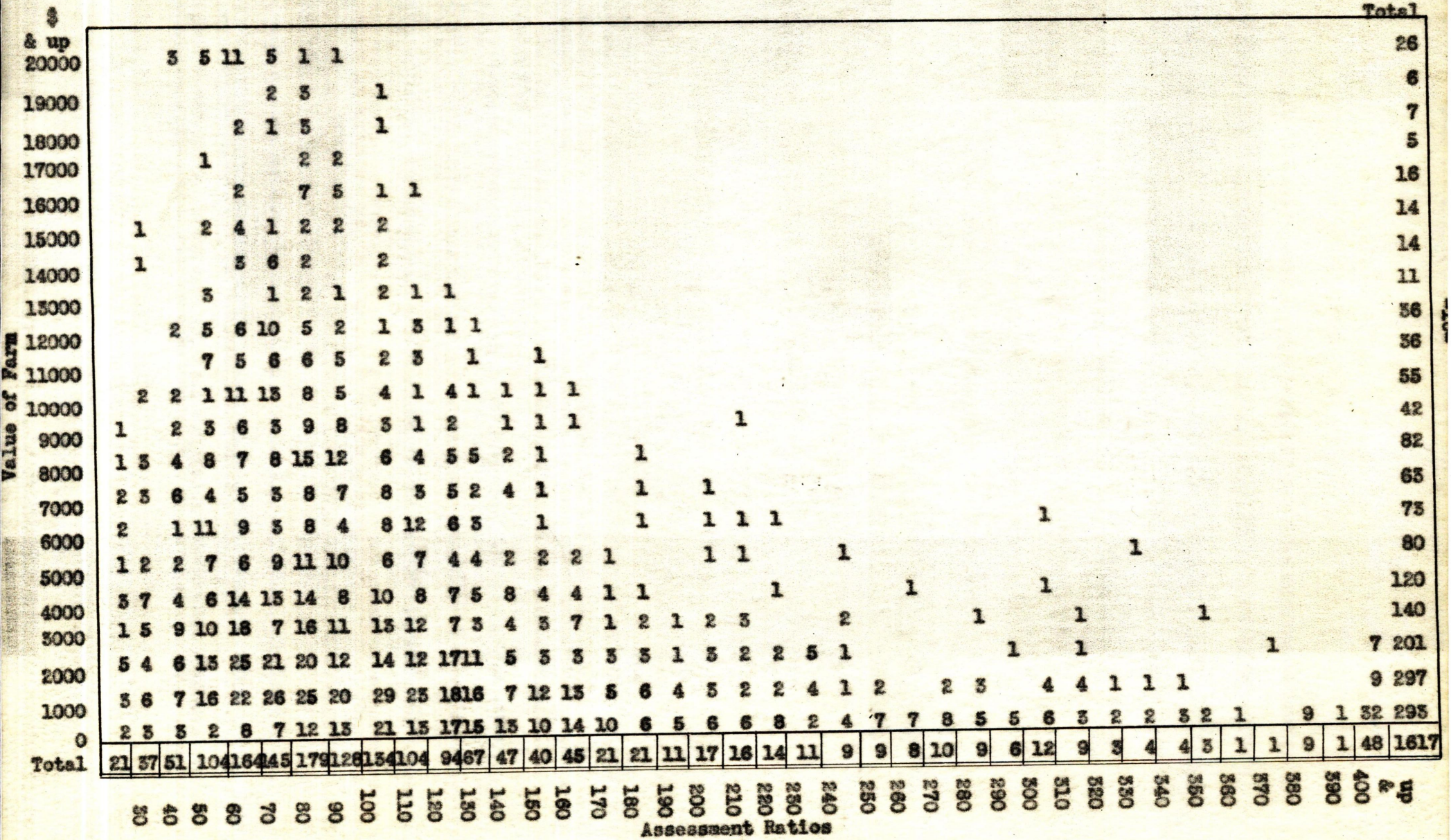


Remembering the "zone of tolerance" previously discussed it is seen that the assessment pattern as here described does not even approximate satisfactory assessment. The extreme dispersion about the ideal assessment would make it quite possible for an owner of property, considering levies the same, to pay taxes on a valuation from 10 per cent to 400 per cent of what it should be, depending on the position his farm occupied in the pattern. Judging from the diagram, however, it is probable that he would be assessed at somewhere between 50 and 120 per cent of value since it is between these points the greatest frequencies lie.

Relation of Assessment to Value of Farm. The purpose of this analysis was to discover if any relationship existed between the value of the farm and the rate at which it was assessed. A scatter diagram was constructed having assessment ratios on the horizontal scale and farm value classes of $1000 each on the vertical scale. Then all the samples were thrown into the diagram according to their respective sale values and assessment ratios. Table 2 shows that those farms priced up to $1000 were likely to be assessed anywhere from 20 per cent to over 400 per cent of their sale value. Those farms in the second group were subject to almost the same influence, but for all groups above it is noticeable that as the farms grow more valuable, assessments become less and less scattered and that those above $10,000 are almost uniformly assessed at 100 or less. This table brings out strongly the regressive character of the tax on farm lands.

Table 2

Scatter Diagram Showing Manner in Which Value of Farm Affects Assessments by Comparing Assessment Ratios with Value of Farm



Further strong evidence that this is true is apparent in Table 3 in which average assessment ratios, average deviations and coefficients are presented. The decline of the average assessment ratio from 219 in the 0-1000 class to 76 in the 12,000-over class proves incontrovertibly the principal objective of this study, i.e., that the low value farm is overassessed and the high value farm is underassessed.

Table 3
Average Assessment Ratios, Average Deviations,
And Coefficients of Dispersion When Data are Classified
According to Value per Farm

Group	No. of Farms	Average Assessment Ratio	Average Deviation	Coefficient of Dispersion
0- 1000	287	219	110	50
1000- 2000	303	131	62	47
2000- 3000	194	123	58	47
3000- 4000	145	106	41	39
4000- 5000	119	100	36	36
5000- 6000	79	90	32	36
6000- 7000	75	99	33	33
7000- 8000	63	91	30	33
8000- 9000	80	87	26	30
9000-10000	42	90	25	28
10000-11000	52	87	22	25
11000-12000	36	85	19	23
12000-over	136	76	15	20

Table 3 also points out that not only may the low value farms be expected to be placed on the tax rolls at more than they are worth, but that this type of property, as is shown by the coefficient of dispersion, will undoubtedly be valued at figures that vary widely from the average for that class. In class 0-1000 the coefficient is .50, and as the value classes become larger and larger the coefficients decline until in the 12000-over class the coefficient is .20. Thus in the higher classes the farms are assessed at less than sale value and vary

little from their class averages, while those in the lowest classes show exactly opposite characteristics.

Percentage Relation of Value of Farm to Assessment. Table 2 is open to the objection that it groups the farms without regard to the average value of farms in the different counties which differ considerably. Thus in Haakon County, the average sale value per farm is $1565 while in Clay County the average is $9442. In Haakon County a farm which sold for, say, $5000 would be a high value farm and hence likely to be underassessed while in Clay County a $5000 property would be a low value farm and hence overassessed. The middle classes in the table would contain values from both counties and show a dispersion not technically correct. The practical force of this argument is somewhat weak, however, since there are few, if any, properties in the high value counties worth less than $3000 and few high value properties in the counties whose average values are low. Therefore, in the lowest and highest classes the effect is almost nil, the distortion coming in the middle classes.

To remedy this difficulty, another scatter diagram was constructed, this time as before, having assessment ratios on the horizontal scale but percentage of the average sale value per farm by county on the vertical scale. In each county the average of the sales was taken and percentages of this average were figured running from 10 to 550 per cent of the mean value.[1] For instance, in Haakon County, 30 per cent of this mean was $410. All items up to $410 were then

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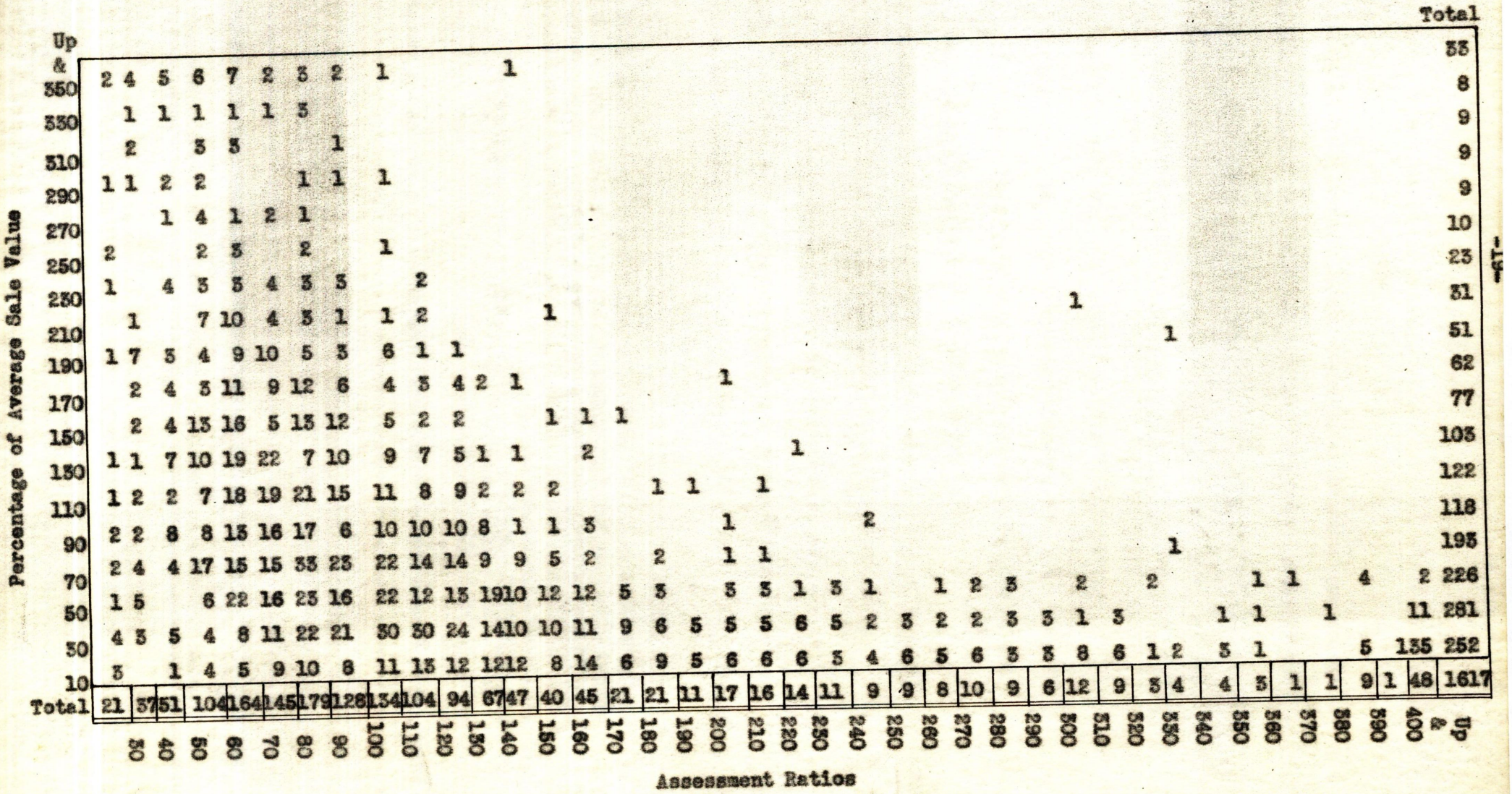
1. See Appendix B for tables of average values and percentages of average values.

Table 4

Scatter Diagram Showing Manner in Which Value of Farm Affects Assessments by Comparing Assessment Ratios with Percentage of Average Sale Value for Each County



classified according to their individual assessment ratios and in the 10 to 30 per cent class on the vertical scale. Fifty per cent of the mean was $685 and items between $410 and $685 were classified as of their assessment ratios on the horizontal scale, and in the 30-50 per cent class on the vertical scale, and so on up to the 350 per cent and over class. This was done for each county. The inconsistency in the classification shown by Table 2 is corrected in this analysis, and inspection of Table 4 will show that when thus classified properly the data show an even greater tendency to regressivity.

To reduce this situation to a basis wherein one can tell at a glance just how the value of the farm affects the rate at which assessment is made, a weighted average was figured for each class on the vertical scale of Table 4.[1] These averages are shown in Table 5.

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1. This average was computed as follows: For any class; the sum of midpoints of assessment ratios times frequency, divided by the sum of the frequencies. For instance, the computation for the class 310-330 per cent is as follows:

Midpoint	Frequency	M x F
35	2	70
55	3	165
65	3	195
95	1	95
	9	525

525 ÷ 9 = 58.33 or average

Table 5
Weighted Average Assessment Ratios in Relation to Percentage of Average Sale Values

Percentage of Average Value	Weighted Average Assessment Ratio
10 - 30	209
30 - 50	147
50 - 70	131
70 - 90	97
90 - 110	93
110 - 130	90
130 - 150	83
150 - 170	79
170 - 190	85
190 - 210	76
210 - 230	81
230 - 250	71
250 - 270	62
270 - 290	65
290 - 310	60
310 - 330	58
330 - 350	66
350 and over	62

It is apparent here that those farms whose values are low in comparison to the average value in the county are assessed extremely high and those farms whose values are represented by a high percentage of the average value are underassessed.

The data in Table 5 were used to construct the curve in Figure 5 which shows pictorially the above-described conditions.

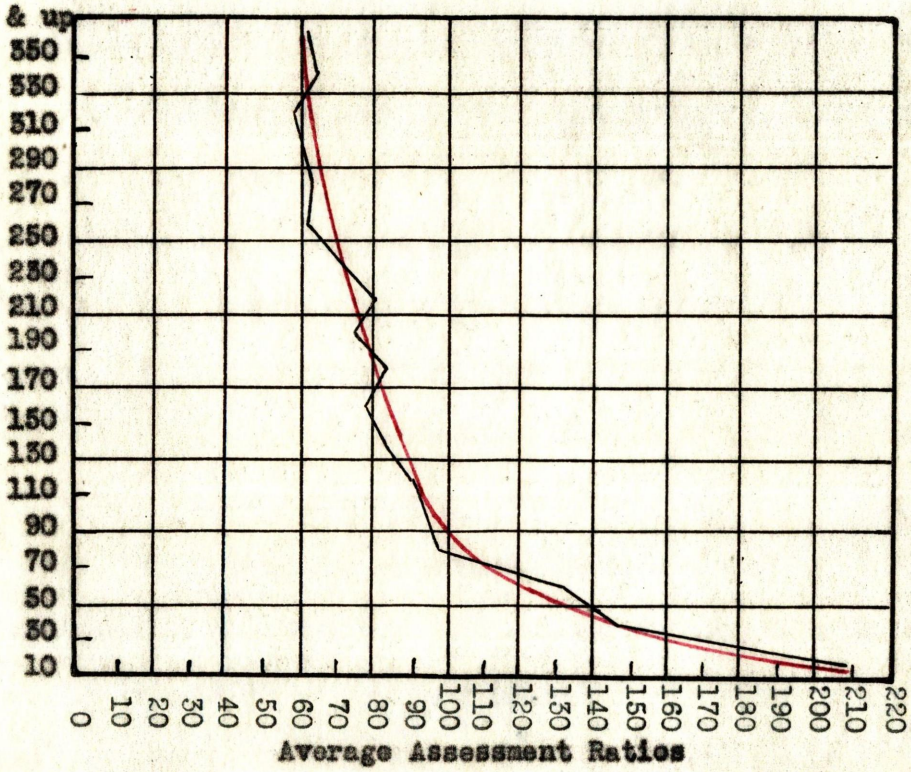

Figure 5. — Curve showing the manner in which the value of farm affects the level at which it is assessed.

The farms that fall within the class 10-30 per cent of the county average sale value were assessed at 209 per cent of their value, while those in the class 550-over were assessed at 62 per cent of their value. The curve shows clearly the positive connection between value and assessment.

ANALYSIS OF DATA ON COUNTY BASIS

This analysis was made with the purpose of showing assessments as they are made within the various counties included in the study. The unit of observation in this section will be the county considered individually rather than the state. The results obtained here are perhaps not as conclusive as they were in the statewide analysis, due to the difference in the number of transfers which support the conclusions reached. It will be found that minor discrepancies exist, but in general outline the same conditions that were noticeable in the last section also obtain within each county.

Three separate classifications were used in this part of the study. First, regardless of the sale value, the data were grouped by counties; second, they were grouped according to value per farm; and third, according to value per acre. These analyses are taken up in order.

Comparison of Assessments. In Table 6 the data are unsorted except that the transfers are separated out by counties. This analysis measures the average levels of assessment and the dispersion about the means. The counties were grouped so that those close geographically would be near each other in the table. There is a definite tendency for those counties which are located in the same area to be assessed at somewhat the same level.

Table 6
Comparison of Average Levels of Assessment, Average Deviations and Coefficients of Dispersion for 18 South Dakota Counties

County	No. of Farms	Average Level of Assessment %	Average Deviation	Coefficient of Dispersion
Clay	75	84	23	27
Minnehaha	65	94	36	38
Union	111	84	16	19
Yankton	86	98	24	24
Davison	41	118	36	31
Hand	104	94	38	40
Sanborn	85	110	28	25
Brown	39	94	32	34
Codington	44	93	30	32
Gregory	160	110	42	38
Lyman	140	104	52	50
Haakon	90	139	64	46
Meade	137	71	27	38
Pennington	123	83	37	44
Ziebach	57	85	50	59
Corson	80	75	33	44
Dewey	86	73	35	48
Walworth	94	81	22	27

The average levels of assessment are smaller for some groups of counties than others. Those in the southeast corner of the state seem to be assessed nearer a correct valuation than those west of the Missouri river. (Refer to map on page 9 for location of counties studied.) There is a wide difference in assessment ratios. Thus, Meade County has an assessment ratio of 71 per cent and Haakon has one of 139 per cent. These counties are near each other but it seems that Haakon very generally overassesses her farm property while Meade underassesses hers. The transfers obtained for Haakon County were nearly all of small value which probably accounts for the extremely high average percentage of assessed to sale value there. Other counties

to the north are underassessed which would indicate that the ratio in Haakon was out of line due to the sample rather than deliberate over-assessment although it is possible, of course, that valuations were held up in order to have a tax base sufficiently large for the fiscal needs and still keep within the levy limitations set by law.

Coefficients of dispersion are lower in the east-river counties which shows that assessments are not only better from the standpoint of the level attained, but also from the standpoint of dispersion about the average. Union County, with a coefficient of .19 is the best, and Ziebach with .59 is the poorest from this angle. The fact, among other things, that the land market in the Union County area is more settled will account in part for the great disparity shown.

It is apparent from Table 6 that the work of assessment is very poorly done in South Dakota. A state levy, which would be uniform for all counties, would bear very differently on the various counties since valuations in one county are above sale values and below in others. The wide scattering of all the accuracy measures used here make it plain that some central authority is necessary to so regulate inter-county assessment that they at least tend to equality.

Within the county, the level of assessment would be unimportant if all property were assessed equally. That this is not the case will be shown in the next classification.

Relation Between Value of Farm and the Level at Which it is Assessed. To make this analysis it was necessary to group the farms in every county in sale value classes. As indicated before the class intervals could not be made uniform because of the differences

in average values as between different sections of the state. However, when those counties which are close geographically are compared, one finds that the intervals chosen here are equal, due, of course, to the similarity in the land prices in the same sections of the state. When Tables 7 and 8 were made, the counties were arranged so that those of the same area are near each other in the table. This will facilitate comparison of those sections which should exhibit somewhat the same characteristics and a study of Table 7 will show that the counties in each group do show marked similarities. Reference to the map on page 9 will enable one to fix the location of the counties included in the study in mind.

The most striking feature Table 7 displays is the overassessment of low value properties as compared with those of higher value. In all counties, as one goes from the lower priced farms to the higher, there is a progressive decline in the average level of assessment. In Clay County, for instance, the level of assessment drops from 126 in the lowest class to 65 in the highest class, which means simply that those who own the farms of higher value pay a smaller proportion of the taxes than they rightfully should while those who very probably can less well afford to pay taxes are forced to pay taxes on valuations which are set at more than their farms are worth. In all counties studied, the lowest classes are assessed the highest. The figures for the first class are in some counties too high, due to inconsistencies in the data, but they only exaggerate somewhat a condition that is undoubtedly true in general outline.

The average deviation measures the dispersion about the mean which is in this study the weighted average percentage of assessed to sale valuation. It will be noted in the table that this figure declines from low to high value properties which indicates that not only are low-priced farms overassessed but they are assessed with much less accuracy. To secure a comparable measure of variation the coefficient of dispersion was calculated, this figure being the percentage which the average deviation is of the mean and thus eliminating the bias displayed by the average deviation which is affected by the size of the mean. The coefficient shows practically the same characteristic the other two measures do, that is, progressive decline from low to high, again showing greater variation in assessment of low priced farms, the tendency in this case being somewhat weaker, however.

Although the calculations in any class may be a few points off one way or the other due to insufficient samples, it is unquestionably true that the general tendencies of assessment of farm property in South Dakota are accurately portrayed by this analysis.

Further proof that the system as now operating conduces to regressivity is given in the next section, which classifies the same data on the basis of value per acre.

Table 7
Number of Farms, Average Levels of Assessment, Average Deviations And Coefficients of Dispersion When Grouped According to Value Per Farm, By County

Sale Value	No. of Farms	Average Level of Assessment	Average Deviation	Coefficient of Dispersion
		Clay		
0- 5000	20	126	14	11
5000- 7500	12	91	25	27
7500-10000	14	95	36	38
10000-12500	10	81	12	15
12500-15000	4	83	21	25
15000-17500	8	70	10	14
17500-over	7	65	9	14
		Minnehaha		
0- 2500	15	195	111	57
2500- 5000	12	124	76	61
5000- 7500	9	118	31	26
7500-10000	5	115	18	16
10000-12500	13	98	27	28
12500-15000	3	70	10	14
15000-over	8	64	16	25
		Union		
0- 2500	4	165	37	23
2500- 5000	14	107	21	20
5000- 7500	22	99	22	22
7500-10000	22	93	20	22
10000-12500	15	78	17	22
12500-15000	10	73	7	10
15000-17500	7	85	7	8
17500-20000	8	81	6	7
20000-over	9	70	8	11
		Yankton		
0- 2500	2	175	37	21
2500- 5000	31	123	40	33
5000- 7500	14	107	31	29
7500-10000	13	105	20	19
10000-12500	13	85	22	26
12500-over	13	85	16	19

Table 7 - Continued

Sale Value	No. of Farms	Average Level of Assessment	Average Deviation	Coefficient of Dispersion
		Davison		
0- 2500	6	298	157	52
2500- 5000	4	157	56	26
5000- 7500	7	159	55	22
7500-10000	10	125	22	18
10000-12500	11	95	12	13
12500-over	3	74	6	8
		Hand		
0- 1000	10	310	15	48
1000- 2000	20	168	55	33
2000- 3000	16	163	50	31
3000- 4000	8	120	14	12
4000- 5000	10	110	21	19
5000- 6000	8	95	76	80
6000- 7000	3	81	17	21
7000- 8000	4	93	42	45
8000- 9000	11	72	19	26
9000-10000	4	91	22	24
10000-over	10	57	14	25
		Sanborn		
0- 2000	5	182	81	44
2000- 3000	6	206	64	31
3000- 4000	8	163	56	34
4000- 5000	13	149	38	26
5000- 6000	8	95	15	16
6000- 7000	11	111	13	12
7000- 8000	3	101	5	5
8000- 9000	10	97	17	18
9000-10000	5	100	5	5
10000-over	16	93	21	22
		Brown		
0- 2500	10	145	51	35
2500- 5000	12	91	21	23
5000- 7500	9	100	44	44
7500-10000	6	82	22	27
10000-over	2	72	36	50

Table 7 - Continued

Sale Value	No. of Farms	Average Level of Assessment	Average Deviation	Coefficient of Dispersion
		Codington		
0- 2500	17	167	108	65
2500- 5000	8	102	22	22
5000- 7500	7	121	21	17
7500-10000	4	88	17	19
10000-12500	3	85	6	7
12500-over	5	69	20	29
		Gregory		
0- 1000	14	312	190	61
1000- 2000	23	265	160	60
2000- 3000	19	194	123	63
3000- 4000	20	125	64	51
4000- 5000	11	96	36	38
5000- 6000	6	130	64	49
6000- 7000	16	101	27	27
7000- 8000	13	82	23	28
8000- 9000	10	98	15	15
9000-10000	4	88	18	20
10000-11000	9	84	12	14
11000-12000	4	75	14	19
12000-over	11	85	15	18
		Lyman		
0- 1000	33	402	231	57
1000- 2000	42	133	43	32
2000- 3000	25	105	28	27
3000- 4000	6	106	32	30
4000- 5000	15	106	37	35
5000- over	19	74	39	53
		Haakon		
0- 500	14	355	111	33
500- 1000	28	249	79	32
1000- 1500	15	173	51	29
1500- 2000	12	115	24	21
2000- 2500	6	93	19	20
2500- over	15	90	22	24
		Meade		
0- 1000	46	136	44	32
1000- 2000	47	83	26	31
2000- 3000	15	69	17	25

Table 7 - Continued

Sale Value	No. of Farms	Average Level of Assessment	Average Deviation	Coefficient of Dispersion
		Meade - Continued		
3000- 4000	9	70	14	20
4000- 5000	8	48	15	32
5000- Over	12	56	16	29
		Pennington		
0- 500	12	230	94	41
500- 1000	35	137	52	40
1000- 1500	20	121	56	46
1500- 2000	16	80	14	17
2000- 2500	8	56	13	23
2500- 3000	9	74	11	14
3000- 3500	7	76	36	47
3500- 4000	2	45	6	2
4000- 4500	2	57	3	6
4500- over	12	75	33	22
		Ziebach		
0- 1000	14	129	49	38
1000- 1500	21	91	18	20
1500- 2000	5	92	11	12
2000- 2500	10	70	6	9
2500- over	7	75	18	13
		Corson		
0- 1000	26	157	56	36
1000- 2000	22	91	37	41
2000- 3000	14	70	19	27
3000- 4000	10	73	31	42
4000- 5000	5	30	46	153
5000- over	5	52	11	21
		Dewey		
0- 1000	34	194	98	50
1000- 2000	24	96	26	27
2000- 3000	12	65	20	32
3000- 4000	9	65	12	18
4000- 5000	5	50	12	24
5000- over	7	44	22	50

Table 7 - Continued

Sale Value	No. of Farms	Average Level of Assessment	Average Deviation	Coefficient of Dispersion
		Walworth		
0- 1000	11	230	145	63
1000- 2000	12	152	69	45
2000- 3000	14	100	27	27
3000- 4000	8	108	35	32
4000- 5000	11	83	20	24
5000- 6000	10	79	18	23
6000- 7000	2	70	14	20
7000- 8000	3	65	3	5
8000- 9000	6	59	15	25
9000-10000	5	74	12	16
10000-over	12	70	11	16

Relation Between Value per Acre and the Level at Which it is Assessed. Having found that assessors are definitely biased in the determination of value when the sale value per farm is considered, the next step taken was to discover whether assessors are influenced by sale value per acre. Examination of Table 8, which is arranged in exactly the same manner as Table 7, will show that the two tables exhibit the same tendencies in all important details. Without any doubt, high value acres escape a portion of their just burden of tax and those acres in the lower value brackets pay more than they should. Aside from variation caused by inadequacies in the sample, the three measures of assessment accuracy, i.e., percentage that assessed value is of sale value, average deviation, and coefficient of dispersion, all declined progressively from low to high value acreage.

Reading down Table 8, one finds the last statement to be true except, as has been mentioned, when the class is distorted by the

inclusion of transfers whose characteristics are unrepresentative of the class and large enough to pull the average off. In Clay County the first class is not assessed at the highest level, but its coefficient of dispersion is the highest, which clearly indicates, exhibiting as it does a condition that obtains in the first classes of all counties studied, that assessments are both high and extremely varied about the mean assessment in the case both of farms and acres of low value. In the counties whose average value is high, the general tendency is to overvalue the properties worth less than from $40-$50 an acre and in the low value counties overvaluation comes in on per acre value of less than from $15-$25. The implication that would naturally be drawn from this is that one should not own property that was much under the average value for the county if he did not want to be overassessed.

Table 8
Number of Farms, Average Levels of Assessment, Average Deviations And Coefficients of Dispersion When Grouped According to Value Per Acre, By County

Per Acre Sale Value	No. of Farms	Average Level of Assessment	Average Deviation	Coefficient of Dispersion
		Clay		
0- 50.00	8	125	51	41
50.00- 60.00	4	134	22	16
60.00- 70.00	9	119	21	18
70.00- 80.00	6	92	12	13
80.00- 90.00	7	111	55	50
90.00-100.00	8	68	4	5
100.00-110.00	12	93	26	28
110.00-120.00	5	74	12	16
120.00-over	16	62	9	14
		Minnehaha		
0- 20.00	5	391	211	54
20.00- 40.00	8	214	44	21
40.00- 60.00	6	138	23	17
60.00- 80.00	18	107	23	21

Table 8 - Continued

Per Acre Sale Value	No. of Farms	Average Level of Assessment	Average Deviation	Coefficient of Dispersion
		Minnehaha - Continued		
80.00-100.00	5	75	18	25
100.00-120.00	11	88	6	7
120.00-140.00	8	85	25	29
140.00-over	8	56	11	20
		Union		
0- 50.00	8	145	47	32
50.00- 60.00	12	124	18	15
60.00- 70.00	7	85	20	24
70.00- 80.00	9	90	9	10
80.00- 90.00	10	87	9	10
90.00-100.00	9	96	13	14
100.00-110.00	16	82	4	5
110.00-120.00	8	80	5	6
120.00-130.00	15	77	4	5
130.00-over	17	64	1	1
		Yankton		
0- 50.00	10	157	36	23
50.00- 60.00	7	121	25	21
60.00- 70.00	12	114	23	20
70.00- 80.00	12	93	26	28
80.00- 90.00	7	115	24	21
90.00-100.00	8	93	9	10
100.00-110.00	7	108	19	18
110.00-120.00	6	85	4	5
120.00-130.00	9	79	14	18
130.00-over	8	66	11	17
		Davison		
0- 20.00	5	454	91	20
20.00- 30.00	2	158	63	40
30.00- 40.00	6	208	58	28
40.00- 50.00	4	154	31	23
50.00- 60.00	7	98	25	26
60.00- 70.00	8	104	12	12
70.00- 80.00	8	103	21	20
80.00- over	3	78	2	3
		Hand		
0- 10.00	17	247	113	46
10.00- 20.00	28	163	57	35

Table 8 - Continued

Per Acre Sale Value	No. of Farms	Average Level of Assessment	Average Deviation	Coefficient of Dispersion
		Hand - Continued		
20.00- 30.00	21	117	19	16
30.00- 40.00	13	84	14	17
40.00- 50.00	5	75	11	15
50.00- 60.00	14	69	18	26
60.00- over	6	44	18	41
		Sanborn		
0- 20.00	8	204	95	47
20.00- 30.00	14	160	38	24
30.00- 40.00	18	121	17	14
40.00- 50.00	8	99	18	18
50.00- 60.00	20	108	13	12
60.00- 70.00	9	88	10	11
70.00- over	8	79	16	20
		Brown		
0- 10.00	3	144	57	40
10.00- 20.00	4	158	33	21
20.00- 30.00	13	108	37	34
30.00- 40.00	7	94	25	27
40.00- 50.00	6	78	20	26
50.00- over	6	74	25	34
		Codington		
0- 10.00	5	455	69	16
10.00- 20.00	5	134	12	9
20.00- 30.00	2	129	18	14
30.00- 40.00	6	124	20	16
40.00- 50.00	4	107	9	8
50.00- 60.00	7	98	8	8
60.00- 70.00	5	64	9	14
70.00- over	10	61	12	20
		Gregory		
0- 10.00	24	419	180	43
10.00- 20.00	38	157	74	47
20.00- 30.00	22	95	42	44
30.00- 40.00	20	102	26	25

Table 8 - Continued

Per Acre Sale Value	No. of Farms	Average Level of Assessment	Average Deviation	Coefficient of Dispersion
		Gregory - Continued		
40.00- 50.00	21	101	17	17
50.00- 60.00	16	91	10	11
60.00- 70.00	17	74	12	16
70.00- over	7	84	13	15
		Lyman		
0- 5.00	18	257	146	62
5.00- 10.00	46	140	40	29
10.00- 15.00	28	100	48	48
15.00- 20.00	20	102	16	16
20.00- 25.00	9	93	62	63
25.00- 30.00	8	72	11	15
30.00- 35.00	6	41	16	39
35.00- over	5	52	5	9
		Haakon		
0- 5.00	34	305	75	25
5.00- 10.00	26	166	41	25
10.00- 15.00	16	103	26	25
15.00- over	14	82	15	18
		Meade		
0- 5.00	38	151	49	32
5.00- 10.00	55	82	18	22
10.00- 15.00	14	66	13	19
15.00- 20.00	14	54	16	30
20.00- over	16	52	14	27
		Pennington		
0- 5.00	31	175	88	50
5.00- 10.00	34	114	37	32
10.00- 15.00	23	63	19	30
15.00- 20.00	15	63	10	2
20.00- 25.00	11	59	17	29
25.00- 30.00	4	111	42	38
30.00- over	5	69	38	55

Table 8 - Continued

Per Acre Sale Value	No. of Farms	Average Level of Assessment	Average Deviation	Coefficient of Dispersion
		Ziebach		
0- 5.00	10	138	60	43
5.00- 10.00	25	92	17	18
10.00- 15.00	16	79	16	20
15.00- over	6	66	14	21
		Corson		
0- 5.00	18	169	68	40
5.00- 10.00	26	110	28	25
10.00- 15.00	15	65	20	31
15.00- 20.00	11	59	12	20
20.00- over	10	40	10	25
		Dewey		
0- 5.00	20	233	92	39
5.00- 10.00	21	105	21	20
10.00- 15.00	20	77	18	23
15.00- 20.00	12	53	17	32
20.00- 25.00	5	52	91	18
25.00- over	8	47	12	26
		Walworth		
0- 10.00	14	207	110	53
10.00- 20.00	24	104	23	22
20.00- 30.00	24	89	12	13
30.00- 40.00	19	69	7	1
40.00- 50.00	7	59	4	6
50.00- over	6	46	11	23

RESULTS OF STUDY

Throughout the course of this analysis it has been demonstrated that the owners of farms whose values are low are liable to be overassessed. This has been shown by the analysis of our data on the basis of both the value per farm and value per acre. Besides this it has been shown that properties are assessed at anywhere from 10 to 400 per cent of their sale value. Great unfairness is the inevitable result of such assessment. Neighbors may have farms that are identical in sale value, yet pay taxes on valuations that are widely different. Levels of assessment vary appreciably between counties, which, while not affecting intra-county levies, would give rise to inequality if a state tax were levied. Better and older farming areas are subject to less variation in assessment as is shown by the lower coefficients of dispersion in Clay, Union, and Yankton counties. The land market in western South Dakota being not so well established as that in the southeastern part of the state conduces to greater variations since value is more of an estimate or guess.

Possible explanations of the tendency to overassess poorer farms and underassess those more valuable, are: Assessors under our system find it impracticable to actually view and attempt to value individually every piece of property in their district, and as a consequence employ an average value per acre for the whole taxing unit. In the nature of the case, this methodcannot help but bring about a type of taxation that penalizes the man whose farm is rocky, soil poor, and improvements few. On the other hand, it will directly benefit the man

whose farm is worth more than the average value used. The farmer whose property is increased in value by such improvements as fences, ditches, good barns, etc., generally does not have these improvements assessed at anywhere near their true value. The tendency noted in the study of effect of value per acre on assessments that low priced acres were overassessed and high value acres underassessed "points to a tendency of the general property tax to become a tax on bare land values."[1] In South Dakota this statement would be somewhat of an exaggeration. It is true, however, that the tax on real estate is unquestionably regressive in its operation. In addition to a tendency to use an average and undervalue improvements, two other things can be mentioned that will help to explain why the tax is regressive. The assessor is apt to be careless in his work and either deliberate or unconscious discrimination seems to be an inevitable concomitant of the system by which valuations are now put upon the tax rolls. These and other defects of the system will be taken up more fully in the following section.

It is somewhat beyond the scope of this study to examine the effects of regressivity on the taxpayer, but a mere indication of some of them will serve to emphasize the importance this basic defect has in influencing various phases of a taxpayer's affairs.

If a prospective purchaser of a small plot of ground had any idea that he would be overtaxed, it is very probable he would not buy, since to a person whose income is small a heavy tax may mean the difference between profit and loss. The undisputable fact that it is

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1. G. B. Clarke and O. B. Jesness, "A Study of Taxation in Minnesota with Particular Reference to the Assessment of Farm Lands", p 21.

almost always the small property owner who is least able to pay taxes seems sufficient to warrant a change that will give him an equal advantage, insofar as taxation goes, with his more powerful neighbor. Should taxes be too large it is likely that, especially in a period of depression, the small farmer will not be able to pay his tax, which would make him delinquent and thus liable to dispossession after the dapse of the period of time prescribed by law. Conditions such as these make one realize that something should be and must be done to alter the situation.

DEFECTS OF PRESENT ASSESSMENT SYSTEM[1]

Under the widely decentralized assessment system now employed in South Dakota, we have over 1500 assessors. According to the law the assessments should be made during the months of May and June, but the Division of Taxation estimates that the work is usually done in from ten to fifteen days. This is not a condition well calculated to produce the best results.

Under the law it is only necessary to be a voter in the district in order to be eligible for the office of assessor. Nevertheless, knowledge of taxation principles, land valuation and the law as it relates to assessment is a prime requisite to the efficient performance of the office of assessor. However, the salary and tenure of the position is scarcely such as to attract men of good qualifications. Consequently, it is the usual thing for the assessor to be a man who probably is not competent to hold a full-time job where he must stand or

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1. Compare Third Annual Report South Dakota Department of Finance, pp 151-159.

fall on his own merits, or there must be pressed into service a man who has not sufficient time to discharge the duties of the office effectively. Many assessors are able men in their own occupations, but lack the special qualifications of a good assessor. They may do the assessing as a sideline, or out of a sense of duty, or to get some extra cash. There are undoubtedly many competent assessors but these are present in spite of the system rather than because of it. However, good assessments in one district do not remedy poor assessments in another, and it is the essence of the uniformity rule that all property be assessed according to true and full value in all districts.

While the Division of Taxation does everything in its power to adequately instruct the local assessors, it cannot exercise the personal supervision over individual assessments that is so necessary to equitable valuation as between individuals and taxing units. These local officials are not directly responsible to anyone except the voters in the home district. Although the law distinctly states that no criterion of value shall be used except the full and true cash value, it is difficult to make the assessors use this one standard universally. According to state tax authorities, some of them seem to think the term "uniformity" applies to the valuation of the property rather than the manner in which the levy is laid and proceed to value all the property in their district "on the average". That is, regardless of the selling prices of the land they blithely place high value property on the rolls at the same rate they do the low value property and thus grossly violate the principle on which the system is built.

Summarizing the tendency of the assessors to adopt varying criteria of value, the Division of Taxation says, "The combination of inability, lack of desire and absolute refusal on the part of local assessors to apply a standard of value fixed by law, to all classes of property brings about a condition of affairs in the assessment rolls that of itself ought to convince anyone of the need of a change in the system of listing and valuing property for the purpose of taxation."[1]

A further indictment of the system consists in the fact that the average assessor is too likely to be subject to local influence. After all, the assessor under the present system in a great majority of cases, is a neighbor of the man whose property he assesses, and if he did not yield to influence in a case of this kind one would be inclined to class him with the saints and angels. If he is sincere in his purpose, and many of the men are, he is likely to be met by obscurantist tactics on the part of the owners and can be sure that he will not hold the job again, which condition of course, would be accepted gladly by a man of this type. The next assessment then would have to be taken over by a man without experience or by one whose scruples would not prevent his listing property on the rolls at a rate satisfactory to his neighbors.

Even if one conceded the highly disputable point that all assessors were equally intelligent and willing to follow the letter of the law, they would still be working under overwhelming handicaps.

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1. Third Annual Report South Dakota Department of Finance, p. 155.

Our local assessors are equipped only with listing blanks and last year's assessment book. This book gives the name of the owner, the description of the property and the amounts at which the property was valued last year. He has no soil maps, nothing to indicate the quality of the land, no scientific knowledge of the principles of land valuation, no statistics as to sales values during the period of time immediately preceding. In short, he has nothing to work with except the ideas he has picked up in practical observation and which may or may not be good. There is great likelihood that they will not coincide with those of the assessor in the next district. Under such conditions, it is a practical impossibility for the review boards to properly allocate the taxes among all the taxing units.

The township review board meets late in June and is allowed a week for its work. It has the right to review the assessment of any property owner. Its members hear complaints and grant relief in any case. The Division of Taxation makes this observation about the manner in which this board performs its duties:

> "A very common custom among this class of officers is to meet on the day prescribed by law and wait for complaints to be made. They take action on the matters complained of, then wait for the next complaint. If no complaint is made, they 'sign up' the books and adjourn. Nothing is done towards checking over the assessments of individuals all over the township, ...in fact, the work of the assessor is taken for granted."[1]

The county equalization board cannot adjust individual assessments except on appeal, and in any case would not have the time

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1. Third Annual Report South Dakota Department of Finance, p 156.

or personnel necessary to go over these assessments. This board can raise or lower the valuation of any class of property, but this rather aggravates than corrects improper initial assessment. The state board has the power to change assessments, but again find it physically impossible to review all individual assessments. The board does run down this kind of valuation on complaint, but cannot be expected to do so otherwise. Percentage changes may be made in property classes, but here as in the county, it can not correct initial assessments.

In view of circumstances like those just reviewed, it seems strange that some attempt has not been made by the legislature to remedy the conditions of assessment. The State Tax Commission in their first biennial report recommended adoption of the county assessor plan, and at various times since then attempts have been made to improve assessment administration. It has been the opinion of tax commissioners that the legislature did not appreciate fully the seriousness of the situation, and if the analysis presented in this paper has done anything to emphasize the regressive effects of the general property system as administered at present, the time and labor involved in the compilation of these figures will have been rewarded many times over.

SUGGESTIONS FOR AN IMPROVED ASSESSMENT SYSTEM

It is the consensus of opinion of tax associations and tax experts that the county unit plan of assessment administration would be superior to the decentralized system now followed.

In the proceedings of the National Tax Association for 1933,

the following recommendations for assessment administration are made:

First, that assessment districts should be large enough to justify the employment of one full-time assessor in each district and that he should receive a salary large enough to permit him to devote full time to his work. The county is the unit suggested as being preferable although smaller districts may be erected if the population is sufficiently large to justify it.

Second, the association "favors strongly" the appointment rather than election of assessors since they believe that, other things being equal, the appointive official has a greater opportunity to do his work efficiently. However, this is a controversial point so the association makes no specific recommendation, but it does insist that the term of office be at least four years in order that the official will have time enough to justify his policies by their results.

Third, that all assessors be subject to removal for wilful negligence or malfeasance in office. The power of removal should rest in the office of the state commission which should be authorized either on its own motion or on complaint to discharge the assessor. In states which now employ this device, it has been found that although the power is seldom exercised, its very existence has a healthful effect on the administration of the office.

The erection of some such type of administration is a necessary antecedent to improvement in individual assessments. The very nature of the present system precludes adoption of reforms because the term of office is too short, the tenure is too uncertain, the pay is too small and concentration of control is almost wholly lacking.

Contingent on adoption of the county unit plan, many improvements may be made. It will then be possible to effect valuations that conform to instructions laid down by law and by so doing attain truly proportional taxation.

After having introduced this reform in administration it will be possible to adopt several practical means by which individual, and as a consequence, total, assessment may be improved. A comprehensive system of land classification, the basis of which would be the uses of land, would greatly facilitate the assessor in his task of valuation. Soil maps, land value maps and tax maps for each district would help in getting all the property on the rolls, and increase the likelihood that the property valuation will be within ten per cent, at least, of the sale value.

Another means by which to improve the typical procedure now followed in South Dakota would be to introduce collection of data relating to value. Information as to the value per acre of lands in any classification would be ascertained through the use of the same type of data used in the analysis of this thesis, supplemented by practical observations of the assessor and close attention on his part to bulletins relating to land values published by the United States Department of Agriculture, the Experiment Station of the State College, and the State Department of Agriculture.

Continuing assessment of land by a competent staff of assessors who would check their results constantly with studies made of the character and qualities of land in the district, the changes in

the uses to which land is put, the changes in sales considerations, the changes in rentals and all the other considerations that bear upon value would without question bring order and fairness into the now haphazard, slipshod and discriminatory methods by which valuations are placed on the tax duplicates.

APPENDIX A

An example of the procedure followed in calculating the average and measures of dispersion follows:[1]

Proprietor	Sale Value	Assessed Value	Assessment Ratio	Deviation from average assessed value 103.5	Deviation times sale value
A	1,500	2,759	183.9	80.4	1,206.00
B	10,000	8,940	89.4	-14.1	1,410.00
C	1,566	752	48.0	-55.5	869.13
D	400	860	215.0	111.5	446.00
E	700	2,700	385.7	282.2	1,975.40
F	4,200	1,405	33.4	-70.1	2,944.20
G	3,600	4,143	115.0	11.5	414.00
H	3,000	4,300	143.3	39.8	1,194.00
	$24,966	$28,859			$10,458.73

28,859 ÷ 24,966 = 103.5, the assessment ratio

10,459 ÷ 24,966 = .42, the average deviation

.42 ÷ 103.5 = .41, the coefficient of dispersion

To obtain the individual assessment ratios as 183.9, 89.4, etc., the assessed valuations were divided by the sale valuations for each farm. The operations shown above were used in the computation of all averages and dispersion measures used in the study, the only variation being in the classifications.

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1. Compare W. H. Dreesen, A Study in the Ratios of Assessed Values to Sale Values of Real Property in Oregon, p 57.

APPENDIX B

Table 1
Total Sale Value of Transfers in Sample,
Number of Transfers and Average Sale Value by County

County	Total Sale Value of Transfers $	Number of Transfers in Sample	Average Sale Value $
Clay	708,145	75	9,442
Minnehaha	563,046	65	8,662
Union	1,155,222	111	10,407
Yankton	659,968	86	7,674
Davison	328,585	41	8,014
Hand	498,486	104	4,793
Sanborn	575,946	85	6,752
Brown	185,266	39	4,750
Codington	242,478	44	5,511
Gregory	827,985	160	5,175
Lyman	375,141	140	2,680
Haakon	122,898	90	1,365
Meade	283,935	137	2,072
Pennington	242,126	125	1,969
Ziebach	85,731	57	1,504
Corson	170,905	80	2,136
Dewey	179,380	86	2,086
Walworth	495,606	94	5,272

Table 2

Percentages of Average Sale Values, By Counties

Per Cent	Clay	Minnehaha	Union	Yankton	Davison	Hand	Sanborn	Brown	Codington
	$	$	$	$	$	$	$	$	$
30	2,853	2,599	3,122	2,302	2,404	1,458	2,026	1,425	1,653
50	4,721	4,331	5,204	3,837	4,007	2,397	3,376	2,375	2,755
70	6,609	6,064	7,285	5,372	5,610	3,355	4,727	3,325	3,858
90	8,498	7,796	9,367	6,907	7,215	4,314	6,077	4,275	4,960
110	10,386	9,528	11,448	8,441	8,816	5,272	7,428	5,225	6,062
130	12,274	11,261	13,530	9,976	10,418	6,231	8,778	6,176	7,164
150	14,163	12,993	15,611	11,511	12,021	7,190	10,128	7,126	8,266
170	16,051	14,726	17,693	13,046	13,624	8,148	11,479	8,076	9,368
190	17,940	16,458	19,774	14,581	15,227	9,107	12,829	9,026	10,471
210	19,828	18,191	21,856	16,116	16,830	10,066	14,180	9,976	11,573
230	21,716	19,923	23,937	17,650	18,433	11,024	15,530	10,926	12,675
250	23,605	21,656	26,019	19,185	20,036	11,983	16,881	11,876	13,777
270	25,493	23,388	28,100	20,720	21,638	12,941	18,231	12,826	14,879
290	27,382	25,121	30,181	22,255	23,241	13,900	19,582	13,776	15,981
310	29,270	26,853	32,263	23,790	24,844	14,859	20,932	14,726	17,084
330	31,159	28,585	34,344	25,324	26,447	15,817	22,283	15,676	18,186
350	33,047	30,318	36,426	26,859	28,050	16,776	23,633	16,626	19,288

Table 2, Continued
Percentages of Average Sale Values, By Counties

Per Cent	Gregory	Lyman	Haakon	Meade	Pennington	Ziebach	Corson	Dewey	Walworth
	$	$	$	$	$	$	$	$	$
30	1,552	804	410	622	591	451	641	626	1,582
50	2,587	1,340	683	1,036	984	752	1,068	1,043	2,636
70	3,622	1,876	956	1,451	1,378	1,053	1,495	1,460	3,691
90	4,657	2,412	1,229	1,865	1,772	1,354	1,923	1,877	4,745
110	5,692	2,948	1,502	2,280	2,165	1,654	2,350	2,294	5,800
130	6,727	3,485	1,775	2,694	2,559	1,955	2,777	2,712	6,854
150	7,762	4,019	2,048	3,109	2,955	2,256	3,204	3,129	7,909
170	8,797	4,555	2,321	3,523	3,346	2,858	3,632	3,546	8,963
190	9,832	5,091	2,595	3,938	3,740	3,159	4,059	3,963	10,018
210	10,867	5,627	2,868	4,352	4,134	3,459	4,486	4,380	11,072
230	11,902	6,163	3,141	4,767	4,528	3,760	4,913	4,797	12,127
250	12,957	6,699	3,414	5,181	4,921	4,061	5,341	5,215	13,181
270	13,972	7,235	3,687	5,596	5,315	4,362	5,768	5,632	14,235
290	15,007	7,771	3,960	6,010	5,709	4,663	6,195	6,049	15,290
310	16,042	8,307	4,233	6,425	6,102	4,963	6,623	6,466	16,344
330	17,077	8,843	4,506	6,839	6,496	5,264	7,050	6,883	17,399
350	18,112	9,379	4,779	7,254	6,890	5,565	7,477	7,300	18,453

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